

Abdomen

1. The midclavicular planes pass through the midpoint of the clavicles to the midpoint of which of the following structures?
- Anterior superior iliac spine\
 - Symphysis pubis
 - Umbilicus
 - Inguinal ligament
 - Xiphoid process

Explanation:

The midclavicular planes extend vertically from the midpoint of the clavicles down to the inguinal ligament. The inguinal ligament, located in the lower abdominal region, acts as a critical anatomical landmark, connecting the anterior superior iliac spine to the pubic tubercle.

Key. D

2. The fascial layer that covers the deep surface of the transverse abdominal muscle is known as which of the following?
- Parietal peritoneum
 - Deep fascia
 - Transversalis fascia
 - Scarpa's fascia
 - Camper's fascia

Explanation:

The transversalis fascia is the fascial layer that covers the deep surface of the transverse abdominal muscle. It is a thin but important layer of connective tissue that lies between the muscle and the parietal peritoneum.

Key. C

3. Where is extraperitoneal fat located?
- Between the abdominal oblique muscles
 - Deep to the parietal peritoneum
 - Superficial to Camper's fascia
 - Superficial to the deep fascia
 - Deep to the transversalis fascia

Explanation:

Extra peritoneal fat is located deep to the transversalis fascia. This fat layer resides between the transversalis fascia and the parietal peritoneum, providing cushioning and insulation for the abdominal organs.

Key. E

4. The superficial muscle fibers of the external abdominal oblique arising from the middle to lower ribs interdigitate with which of the following muscles?
- Internal abdominal oblique
 - Serratus anterior
 - Rectus abdominis
 - Pyramidalis
 - Transversus abdominis

Explanation:

The superficial muscle fibers of the external abdominal

This interdigitation occurs where the **external oblique** attaches to the lower ribs, creating a **seamless** connection between the muscles, which is **essential** for coordinated movement and stability of the **thoracic** and **abdominal** regions.

Key. B

5. The anterolateral abdominal wall is bounded by all of the following structures EXCEPT:

- Cartilages of the 7th through 10th ribs
- Linea alba
- Xiphoid process
- Inguinal ligament
- Pelvic bone

Explanation:

The anterolateral abdominal wall is bounded by the cartilages of the 7th through 10th ribs, the **xiphoid** process, the **inguinal ligament**, and the **pelvic bone**. The linea alba, however, is not a boundary but a **midline** structure where the aponeuroses of the abdominal.

Key. B

6. The aponeuroses of all three flat muscles of the anterolateral abdominal wall interlace in which of the following structures?

- Inguinal ligament
- Transversalis fascia
- Linea alba
- Anterior superior iliac spine
- Rectus abdominis

Explanation:

The aponeuroses of the three flat muscles of the anterolateral abdominal wall (external oblique, internal oblique, and transversus abdominis) interlace at the **linea alba**.

Key. C

7. All of the following structures are located within the rectus sheath EXCEPT:

- Pyramidalis
- Rectus abdominis
- Inferior epigastric arteries and veins
- Deep inguinal ring
- Ventral primary rami of T7-T12 nerves

Explanation:

The rectus sheath contains the **rectus abdominis**, **pyramidalis**, **inferior epigastric vessels**, and the **ventral primary rami of T7-T12 nerves**. However, the **deep inguinal ring** is not located within the **rectus sheath**; it is a structure in the **inguinal region** through which the **spermatic cord** (in males) or the **round ligament** (in females) passes.

Key. D

Inferiorly, the inferior margin of the external oblique aponeurosis thickens and folds back on itself to form which of the following structures?

- A. Rectus sheath
- B. Inguinal ligament
- C. Arcuate line
- D. Deep inguinal ring
- E. Fundiform ligament

Explanation:

The inferior margin of the external oblique aponeurosis thickens and folds back on itself to form the inguinal ligament. This ligament plays a crucial role in the structure of the lower abdomen and the formation of the inguinal canal.

Key. B

9. The reflected inguinal ligament receives fibers from the contralateral aponeurosis of which of the following structures?

- A. External abdominal oblique
- B. Internal abdominal oblique
- C. Transverse abdominal oblique
- D. Rectus abdominis
- E. Pyramidalis

Explanation:

The reflected inguinal ligament is a part of the external abdominal oblique aponeurosis and receives fibers from the contralateral external abdominal oblique muscle. This reflection contributes to the strength of the inguinal region.

Key. A

10. Between the internal oblique and transverse abdominal muscles is a neurovascular plane that contains all of the following EXCEPT:

- A. Iliohypogastric nerve
- B. Deep circumflex iliac artery
- C. Inferior epigastric artery
- D. Subcostal nerve
- E. Ilioinguinal nerve

Explanation:

The neurovascular plane between the internal oblique and transversus abdominis muscles contains nerves such as the iliohypogastric, subcostal, and ilioinguinal nerves. The deep circumflex iliac artery, however, is not found in this plane; it runs along the iliac crest.

Key. B

11. The rectus abdominis muscle is anchored transversely by attachment to the anterior layer of the rectus sheath by which of the following structures?

- A. Pubic tubercle
- B. Xiphoid process
- C. Linea alba
- D. Tendinous intersections
- E. Umbilicus

Explanation:

The rectus abdominis muscle is anchored transversely by tendinous intersections, which are fibrous bands that divide the muscle into segments, giving it the "six-pack" appearance.

Key. D

12. Which of the following structures defines the point at which the posterior lamina of the internal oblique and the aponeurosis of the transverse abdominal become part of the anterior rectus sheath?

- A. Arcuate line
- B. Inguinal ligament
- C. Tendinous intersections
- D. Deep inguinal ring
- E. Medial crus

Explanation:

The arcuate line is the point below which the posterior lamina of the internal oblique and the aponeurosis of the transverse abdominis pass in front of the rectus abdominis muscle to form the anterior rectus sheath.

Key. A

13. The two medial umbilical folds represent remnants of which of the following structures?

- A. Urachus
- B. Umbilical arteries
- C. Umbilical veins
- D. Ductus venosus
- E. Ductus arteriosus

Explanation:

The two medial umbilical folds represent the remnants of the umbilical arteries, which were part of the fetal circulation, transporting deoxygenated blood from the fetus to the placenta.

Key. B

14. Which of the following fossae are potential sites for direct inguinal hernias?

- A. Supravesical
- B. Medial inguinal
- C. Lateral inguinal
- D. Ischiorectal
- E. Iliac

Explanation:

Direct inguinal hernias occur through the medial inguinal fossa, which is located medial to the inferior epigastric vessels and within the Hesselbach triangle.

Key. B

15. The inguinal canal contains which of the following nerves?

- A. Iliohypogastric
- B. Ilioinguinal
- C. Genital branch of the genitofemoral
- D. Obturator
- E. Lateral femoral cutaneous

Explanation:

The ilioinguinal nerve runs through the inguinal canal and exits it at the superficial inguinal ring, innervating parts of the genital region and upper medial thigh.

Key. B

16. Which of the following structures give rise to the deep inguinal ring?

- A. Gubernaculum
- B. Conjoined tendon
- C. Lacunar ligament
- D. External abdominal oblique aponeurosis
- E. Transversalis fascia

Explanation:

The deep inguinal ring is an opening in the transversalis fascia, which is located superior to the midpoint of the inguinal ligament and is the entrance to the inguinal canal.

Key. E

17. The lacunar ligament is a reflection or extension from the deep aspect of which of the following structures?

- A. Falciform ligament
- B. Round ligament
- C. Rectus sheath
- D. Inguinal ligament
- E. Transversalis fascia

Explanation:

The lacunar ligament is an extension of the inguinal ligament that attaches to the pectenial line of the pubic bone, forming the medial boundary of the femoral canal.

Key. D

18. The iliopubic tract is the thickened inferior margin of which of the following structures?

- A. Inguinal ligament
- B. Transversalis fascia
- C. Conjoined tendon
- D. Falciform ligament
- E. Round ligament

Explanation:

The iliopubic tract is the thickened inferior margin of the transversalis fascia and runs parallel to the inguinal ligament, contributing to the floor of the inguinal canal.

Key. B

19. The testes develop in which of the following areas?

- A. Scrotum
- B. Abdominal cavity
- C. Extraperitoneal
- D. Rectus sheath
- E. Superficial fascia

Explanation:

The testes develop in the extraperitoneal space of the posterior abdominal wall before descending into the scrotum during fetal development.

20. The gubernaculum is represented postnatally by which of the following structures?

- A. Tunica vaginalis testes
- B. Processus vaginalis
- C. Ductus deferens
- D. Scrotal ligament
- E. Internal spermatic fascia

Explanation:

The gubernaculum, which guides the descent of the testes during development, is represented postnatally by the scrotal ligament, which anchors the testis to the scrotum.

Key. D

21. The cremaster muscle and fascia are derived from which of the following structures?

- A. External abdominal oblique muscle
- B. Transverse abdominal muscle and fascia
- C. Internal abdominal muscle
- D. Transversalis fascia
- E. External abdominal aponeurosis

Explanation:

The cremaster muscle and fascia are derived from the internal abdominal oblique muscle, which elevates the testes in response to cold or touch.

Key. C

22. The cremaster muscle is innervated by which of the following nerves?

- A. Genital branch of the genitofemoral
- B. Ilioinguinal
- C. T12
- D. Femoral
- E. Obturator

Explanation:

The cremaster muscle is innervated by the genital branch of the genitofemoral nerve, which is responsible for the cremasteric reflex.

Key. A

23. The artery of the ductus deferens arises from which of the following structures?

- A. Aorta
- B. Inferior epigastric
- C. Inferior vesical
- D. Pudendal
- E. Common iliac

Explanation:

The artery of the ductus deferens typically arises from the inferior vesical artery, supplying blood to the ductus deferens, which transports sperm from the testes to the urethra.

Key. C

24. All of the following nerves contribute branches to the scrotum EXCEPT:

- A. Lateral femoral cutaneous
- B. Pudendal
- C. Ilioinguinal
- D. Genitofemoral
- E. Posterior femoral cutaneous

Explanation:

The lateral femoral cutaneous nerve does not contribute to the innervation of the scrotum. The scrotum receives sensory innervation from the pudendal, ilioinguinal, genitofemoral, and posterior femoral cutaneous nerves.

Key. A

25. The epididymis is located on the posterior aspect of which of the following structures?

- A. Urinary bladder
- B. Prostate
- C. Testis
- D. Ovary
- E. Uterine tube

Explanation:

The epididymis is a structure attached to the posterior aspect of the testis and is involved in the storage and maturation of sperm.

Key. C

26. The testes are covered by a tough fibrous coat known as the:

- A. Cremaster fascia
- B. Tunica albuginea
- C. Gubernaculum
- D. Tunica dartos
- E. Scarpa's fascia

Explanation:

The tunica albuginea is the tough fibrous coat that covers the testes, providing protection and maintaining the shape of the testis.

Key. B

27. Which of the following structures represents the closed-off distal part of the embryonic processus vaginalis?

- A. Gubernaculum
- B. Tunica albuginea
- C. Epididymis
- D. Tunica vaginalis
- E. Urogenital diaphragm

Explanation:

The tunica vaginalis is the closed-off distal part of the embryonic processus vaginalis, which is a serous membrane that covers the testis.

Key. D

28. The pampiniform plexus provides which of the following testicular functions?

- A. Lymphatic drainage
- B. Blood supply
- C. Nerve supply

D. Thermoregulatory system

E. Hormonal production

Explanation:

The pampiniform plexus is a network of veins that plays a key role in the thermoregulation of the testes, helping to maintain an optimal temperature for spermatogenesis.

Key. D

29. The parasympathetic innervation of the testis includes which of the following nerves?

- A. Pelvic splanchnic
- B. Vagus
- C. Iliohypogastric
- D. Ilioinguinal
- E. Pudendal

Explanation:

The parasympathetic innervation of the testis is provided by the vagus nerve, which influences testicular functions such as blood flow.

Key. B

30. The peritoneal cavity contains which of the following?

- A. Liver
- B. Pancreas
- C. Large intestine
- D. Kidney
- E. Peritoneal fluid

Explanation:

The peritoneal cavity is a potential space within the abdominal cavity that contains a small amount of peritoneal fluid, which allows for the movement and lubrication of the abdominal organs.

Key. E

31. Which of the following structures connects the lesser curvature of the stomach and the proximal part of the duodenum to the liver?

- A. Lesser omentum
- B. Peritoneal ligament
- C. Mesentery
- D. Lesser omentum
- E. Peritoneal fold

Explanation:

The lesser omentum is a double layer of peritoneum that connects the lesser curvature of the stomach and the proximal part of the duodenum to the liver, providing support and containing blood vessels.

Key. D

32. Which of the following structures is often referred to as the "abdominal policeman"?

- A. Hepatoduodenal ligament
- B. Gastrohepatic ligament
- C. Greater omentum
- D. Gastrocolic ligament
- E. Falciform ligament

Explanation:

The greater omentum is referred to as the "abdominal policeman" due to its role in localizing infections and

trauma within the abdomen by adhering to inflamed areas and isolating them from the rest of the peritoneal cavity.

Key. C

33. Which of the following ligaments conducts the portal triad (portal vein, hepatic artery, and bile duct)?

- A. Greater omentum
- B. Falciform ligament
- C. Gastrohepatic ligament
- D. Hepatoduodenal ligament
- E. Gastrocolic ligament

Explanation:

The hepatoduodenal ligament is part of the lesser omentum and contains the portal triad, which includes the portal vein, hepatic artery, and bile duct, crucial for the liver's blood supply and bile drainage.

Key. D

34. Which of the following structures forms the superior boundary of the omental foramen?

- A. Inferior vena cava
- B. Duodenum
- C. Caudate lobe of the liver
- D. Head of the pancreas
- E. Hepatoduodenal ligament

Explanation:

The caudate lobe of the liver forms the superior boundary of the omental foramen (also known as the foramen of Winslow), which is an opening connecting the greater and lesser sacs of the peritoneal cavity.

Key. C

35. Which of the following structures contains both smooth and skeletal muscles?

- A. Stomach
- B. Jejunum
- C. Cecum
- D. Esophagus
- E. Rectum

Explanation:

The esophagus contains both smooth and skeletal muscle fibers. The upper third consists of skeletal muscle, the middle third of mixed muscle, and the lower third of smooth muscle, enabling voluntary and involuntary control of swallowing.

Key. D

36. Which of the following arteries provides the abdominal parts of the esophagus with its arterial supply?

- A. Cystic
- B. Gastroduodenal
- C. Left gastric
- D. Hepatic
- E. Left gastroepiploic

Explanation:

The left gastric artery, a branch of the celiac trunk, provides arterial blood supply to the abdominal part of the esophagus.

Key. C

37. Rugae are located in which of the following structures?

- A. Duodenum
- B. Stomach
- C. Cecum
- D. Ileum
- E. Transverse colon

Explanation:

Rugae are folds located in the lining of the stomach, allowing it to expand as it fills with food and aiding in the mechanical digestion process.

Key. B

38. The left gastro-omental artery arises from which of the following arteries?

- A. Splenic
- B. Hepatic
- C. Gastroduodenal
- D. Left gastric
- E. Right gastric

Explanation:

The left gastro-omental artery arises from the splenic artery and supplies blood to the greater curvature of the stomach and the greater omentum.

Key. A

39. The sympathetic nerve supply of the stomach arises from which of the following cord segments?

- A. T1-T5
- B. T6-T9
- C. T6-T12
- D. L1-L3
- E. T10-L2

Explanation:

The sympathetic nerve supply to the stomach arises from the T6-T9 spinal cord segments, which contribute to the greater splanchnic nerve, influencing gastric function.

Key. B

40. The first part of the duodenum is located at which of the following vertebral levels?

- A. T10
- B. L2
- C. L1
- D. L5
- E. L3

Explanation:

The first part of the duodenum is located at the L1 vertebral level, making it the highest segment of the duodenum, also known as the duodenal bulb.

Key. C

41. The bile and pancreatic ducts enter which of the following structures?
- Stomach
 - 2nd portion of the duodenum
 - Cecum
 - Ileum
 - Liver

Explanation:

The bile duct and the main pancreatic duct enter the 2nd portion of the duodenum at the ampulla of Vater, where their contents are released into the small intestine.

Key. B

42. Which of the following structures crosses over the inferior or horizontal (third) portion of the duodenum?

- Pancreas
- Hepatic artery
- Portal vein
- Superior mesenteric artery
- Inferior mesenteric artery

Explanation:

The superior mesenteric artery crosses over the inferior or horizontal (third) portion of the duodenum, a region where the duodenum can be compressed by the artery, causing a condition known as superior mesenteric artery syndrome.

Key. D

43. The duodenojejunal junction is supported by the attachment of which of the following structures?

- Suspensory muscle of the duodenum (ligament of Treitz)
- Falciform ligament
- Hepatoduodenal ligament
- Greater omentum
- Transverse mesocolon

Explanation:

The duodenojejunal junction is supported by the suspensory muscle of the duodenum, also known as the ligament of Treitz, which holds the duodenum in place and marks the transition between the duodenum and the jejunum.

Key. A

44. The superior anterior and posterior pancreaticoduodenal arteries arise from which of the following arteries?

- Right colic
- Ileocolic
- Gastroduodenal
- Hepatic
- Splenic

Explanation:

The superior anterior and posterior pancreaticoduodenal arteries arise from the gastroduodenal artery, supplying the pancreas and duodenum.

Key. C

45. The root of the mesentery crosses all of the following structures EXCEPT:
- Ascending and horizontal parts of the duodenum
 - Abdominal aorta
 - Inferior vena cava
 - Right ureter
 - Splenic artery

Explanation:

The root of the mesentery crosses several important structures, including the ascending and horizontal parts of the duodenum, the abdominal aorta, the inferior vena cava, and the right ureter, but it does not cross the splenic artery, which is located more superiorly.

Key. E

46. The superior mesenteric and splenic veins unite to form the portal vein posterior to which of the following structures?

- Right kidney
- Neck of the pancreas
- Pylorus of the stomach
- 2nd portion of the duodenum
- Spleen

Explanation:

The superior mesenteric and splenic veins unite to form the portal vein posterior to the neck of the pancreas, which is a key location in the venous drainage of the gastrointestinal tract.

Key. B

47. The sympathetic fibers in the nerves to the jejunum and ileum originate in which of the following spinal cord segments?

- C5-T1
- T1-T5
- T5-T9
- T9-T12
- L1-L2

Explanation:

The sympathetic fibers to the jejunum and ileum originate from the T5-T9 spinal cord segments, forming the greater splanchnic nerve, which provides sympathetic innervation to these parts of the small intestine.

Key. C

48. Circular folds (plicae circulares) are characteristic of which of the following structures?

- Transverse colon
- Stomach
- Jejunum
- Cecum
- Sigmoid colon

Explanation:

Circular folds, also known as plicae circulares, are prominent in the jejunum, increasing the surface area for absorption and aiding in the digestive process.

Key. D

49. Omental appendices are located on which of the following structures?
- Stomach
 - Duodenum
 - Ileum
 - Ascending colon
 - Liver

Explanation:

Omental appendices are small, fat-filled pouches of visceral peritoneum that are attached to the colon, particularly the ascending colon, and are unique to the large intestine.

Key. D

50. There are no tenia coli in which of the following structures?

- Ascending colon
- Transverse colon
- Descending colon
- Sigmoid colon
- Appendix

Explanation:

The appendix does not have tenia coli, which are bands of smooth muscle found along the length of the colon, aiding in the movement of contents through the large intestine.

Key. C

51. The appendicular artery is a branch of which of the following arteries?

- Inferior mesenteric
- Inferior epigastric
- Ileocolic
- Testicular
- Renal

Explanation:

The appendicular artery, which supplies blood to the appendix, is a branch of the ileocolic artery, itself a branch of the superior mesenteric artery.

Key. C

52. Which of the following structures can be located deep to a point that is one-third of the way along the oblique line, joining the right anterior superior iliac spine to the umbilicus?

- Gallbladder
- Spleen
- Right kidney
- Appendix
- Urinary bladder

Explanation:

The appendix is located deep to a point that is one-third of the way along the line joining the right anterior superior iliac spine to the umbilicus, a point known as McBurney's point, which is clinically significant in the diagnosis of appendicitis.

Key. D

53. Which of the following structures receives parasympathetic innervation from the pelvic splanchnic nerves?

- Appendix
- Sigmoid colon
- Ileum
- Ascending colon
- Duodenum

Explanation:

The sigmoid colon receives parasympathetic innervation from the pelvic splanchnic nerves (S2-S4), which contribute to the regulation of bowel movements during defecation.

Key. B

54. The rectum is continuous with the sigmoid colon at the level of which of the following vertebrae?

- L3
- L5
- S3
- S5
- Coccygeal 1

Explanation:

The rectum is continuous with the sigmoid colon at the level of the S3 vertebra, marking the transition from sigmoid colon to the rectum.

Key. C

55. All of the following statements concerning the spleen are correct EXCEPT:

- Largest of the lymphatic organs
- Associated posteriorly with the left 9th through 11th ribs
- Located retroperitoneally
- Normally, does not descend inferior to the costal region
- Varies considerably in size, weight, and shape

Explanation:

The spleen is located intraperitoneally, retroperitoneally. It is the largest lymphatic organ associated with the left 9th through 11th ribs, varying in size, weight, and shape.

Key. C

56. The splenic artery usually follows a tortuous course along which of the following structures?

- Left kidney
- Greater curvature of the stomach
- Pancreas
- Transverse colon
- Cecum

Explanation:

The splenic artery typically follows a tortuous course along the superior border of the pancreas, supplying blood to the spleen, stomach, and pancreas.

Key. C

57. The head of the pancreas is embraced by which of the following structures?

- A. Stomach
- B. Spleen
- C. Cecum
- D. C-shaped curve of the duodenum
- E. Transverse mesocolon

Explanation:

The head of the pancreas is situated within the C-shaped curve of the duodenum, allowing close interaction between these two structures.

Key. D

58. The head of the pancreas rests posteriorly on which of the following structures?

- A. Left renal vein
- B. Superior vena cava
- C. Splenic artery
- D. Duodenum
- E. Superior mesenteric artery

Explanation:

The head of the pancreas lies directly anterior to the duodenum, making it the structure that it rests upon posteriorly.

Key. D

59. The main pancreatic duct and the bile duct unite to form which of the following structures?

- A. Common bile duct
- B. Hepatic duct
- C. Accessory pancreatic duct
- D. Cystic duct
- E. Hepatopancreatic ampulla

Explanation:

The main pancreatic duct and the bile duct unite to form the hepatopancreatic ampulla, also known as the ampulla of Vater, which empties into the second part of the duodenum.

Key. E

60. The round ligament of the liver is the fibrous remnant of which of the following structures?

- A. Umbilical vein
- B. Ductus venosus
- C. Ductus arteriosus
- D. Umbilical artery
- E. Urachus

Explanation:

The round ligament of the liver, or ligamentum teres, is a remnant of the umbilical vein that carried oxygenated blood from the placenta to the fetus.

Key. A

Which of the following ligaments encloses the portal triad?

- A. Hepatoduodenal
- B. Hepatogastric

- C. Gastrocolic
- D. Hepatorenal
- E. Gastrosplenic

Explanation:

The hepatoduodenal ligament encloses the portal triad, which includes the portal vein, hepatic artery, and bile duct, connecting the liver to the duodenum.

Key. A

63. The portion of the hepatic artery extending between the celiac trunk and the gastroduodenal artery is known as the:

- A. Proper hepatic
- B. Common hepatic
- C. Right hepatic
- D. Left hepatic
- E. Middle hepatic

Explanation:

The common hepatic artery is the portion that extends from the celiac trunk to the point where it bifurcates into the proper hepatic artery and the gastroduodenal artery.

Key. B

64. The hepatic veins drain into which of the following structures?

- A. Liver
- B. Inferior vena cava
- C. Spleen
- D. Portal vein
- E. Superior vena cava

Explanation:

The hepatic veins drain deoxygenated blood from the liver directly into the inferior vena cava, which then carries it to the heart.

Key. B

65. The spiral valve is located in which of the following structures?

- A. Head of pancreas
- B. Pylorus
- C. Neck of gallbladder
- D. Cecum
- E. Rectum

Explanation:

The spiral valve, or valve of Heister, is found in the neck of the gallbladder, helping to regulate the flow of bile into and out of the gallbladder.

Key. C

66. The cystic artery commonly arises from the right hepatic artery in the angle between the common hepatic duct and which of the following structures?

- A. Cystic duct
- B. Celiac trunk
- C. Portal vein
- D. Proper hepatic artery
- E. Gastroduodenal artery

Explanation:

The cystic artery typically arises from the right hepatic artery, often within the triangle formed by the common hepatic duct, cystic duct, and the liver (Calot's triangle).

Key. A

67. Which of the following veins, when dilated, produces caput medusae?

- A. Proper hepatic
- B. Splenic
- C. Cystic
- D. Paraumbilical
- E. Rectal

Explanation:

The paraumbilical veins, when dilated due to portal hypertension, can cause a condition known as caput medusae, characterized by engorged veins radiating from the umbilicus.

Key. D

68. Inferiorly, the posterior surfaces of the kidney are related to all of the following structures EXCEPT:

- A. Subcostal nerve
- B. Iliohypogastric nerve
- C. Ilioinguinal nerve
- D. 2nd portion of the duodenum
- E. Quadratus lumborum

Explanation:

The 2nd portion of the duodenum is located anterior to the right kidney, not posterior, making it the exception in this list.

Key. D

69. The renal papillae empty into which of the following structures?

- A. Renal vein
- B. Ureter
- C. Minor calyces
- D. Renal pyramid
- E. Renal column

Explanation:

The renal papillae empty into the minor calyces, which are the initial collecting structures within the kidney that receive urine from the renal pyramids.

Key. C

70. All of the following statements concerning the renal hilum are correct EXCEPT:

- A. The renal vein is anterior to the renal artery
- B. The renal artery is anterior to the renal pelvis
- C. It is the entrance to the renal sinus
- D. It is located on the concave medial margin of the kidney
- E. It contains the renal pyramids

Explanation:

The renal pyramids are located within the renal medulla, not the renal hilum, making this statement incorrect.

Key. E

71. The suprarenal glands are located between the superomedial aspects of the kidneys and which of the following structures?

- A. Neck of the pancreas
- B. Diaphragm
- C. Quadratus lobe of the liver
- D. Mesentery
- E. 1st part of the duodenum

Explanation:

The suprarenal (adrenal) glands are located between the superomedial aspect of the kidneys and the diaphragm, allowing for close interaction with the kidneys.

Key. B

72. Which of the following structures is related to the spleen, stomach, pancreas, and the left crus of the diaphragm?

- A. Left suprarenal gland
- B. Left kidney
- C. Left gonadal vein
- D. Transverse mesocolon
- E. Abdominal aorta

Explanation:

The left suprarenal gland is anatomically positioned in close relation to the spleen, stomach, pancreas, and the left crus of the diaphragm.

Key. A

73. All of the following statements concerning the suprarenal cortex are correct EXCEPT:

- A. Derives from mesoderm
- B. Secretes corticosteroids
- C. Secretes androgens
- D. Associated with the sympathetic nervous system
- E. Causes the kidney to retain sodium

Explanation:

The suprarenal cortex is not directly associated with the sympathetic nervous system; it is the medulla of the adrenal gland that has this connection, making option D incorrect.

Key. D

74. The superior suprarenal arteries are branches of which of the following arteries?

- A. Abdominal aorta
- B. Renal
- C. Inferior phrenic
- D. Celiac trunk
- E. Superior mesenteric

Explanation:

The superior suprarenal arteries arise from the inferior phrenic arteries, which supply blood to the diaphragm and the suprarenal glands.

Key. C

Which c. is considered to be the chief muscle of inspiration?

- A. Internal intercostal
- B. External intercostal
- C. Diaphragm
- D. Scalene
- E. Sternocleidomastoid

Explanation:

The diaphragm is the primary muscle responsible for inspiration, playing a key role in expanding the thoracic cavity during breathing.

Key. C

All of the following statements concerning the central tendon of the diaphragm are correct EXCEPT:

- A. It has no bony attachments.
- B. It is incompletely divided into three leaves.
- C. It is perforated by the aorta.
- D. It lies near the center of the diaphragm.
- E. It is perforated by the inferior vena cava.

Explanation:

The aorta passes through the aortic hiatus, not the central tendon, making this statement incorrect.

Key. C

The crura of the diaphragm are musculotendinous bundles that arise from which of the following structures?

- A. Posterior longitudinal ligament
- B. Sternum
- C. Bodies of lumbar vertebrae L1, L2, and L3
- D. Renal fascia
- E. Psoas major muscle

Explanation:

The crura of the diaphragm are tendinous structures that originate from the bodies of the lumbar vertebrae L1, L2, and L3, providing attachment points for the diaphragm.

Key. C

The nerves of the kidneys and suprarenal glands are derived from which of the following plexuses?

- A. Celiac
- B. Lumbar
- C. Inferior mesenteric
- D. Sacral
- E. Inferior hypogastric

Explanation:

The nerves supplying the kidneys and suprarenal glands originate from the celiac plexus, which is a major splanchnic nerve plexus in the abdomen.

Key. A

79. The lateral arcuate ligaments are formed from thickenings of which of the following muscular fasciae?

- A. Psoas major
- B. Quadratus lumborum
- C. Transversus abdominis
- D. Rectus abdominis
- E. Sternalis

Explanation:

The lateral arcuate ligaments are formed by the thickening of the fascia covering the quadratus lumborum muscle, which is located on the posterior abdominal wall.

Key. B

80. All of the following structures may herniate into the thoracic cavity when there is a traumatic diaphragmatic hernia EXCEPT:

- A. Stomach
- B. Kidney
- C. Intestine
- D. Mesentery
- E. Spleen

Explanation:

The kidney is retroperitoneal and is not typically involved in herniation through the diaphragm, unlike the stomach, intestines, mesentery, and spleen.

Key. B

81. All of the following structures pass through the esophageal hiatus EXCEPT:

- A. Posterior vagal trunk
- B. Esophageal branches of the left gastric vessels
- C. Anterior vagal trunk
- D. Thoracic duct
- E. Esophagus

Explanation:

The thoracic duct passes through the aortic hiatus, not the esophageal hiatus, making this statement incorrect.

Key. D

82. The greater and lesser splanchnic nerves pass through the diaphragm via which of the following structures?

- A. Sternocostal foramen
- B. Aortic hiatus
- C. Diaphragmatic crus
- D. Vena caval foramen
- E. Medial arcuate ligament

Explanation:

The greater and lesser splanchnic nerves pass through the diaphragm via the diaphragmatic crus, which are tendinous structures that provide passage for these nerves.

Key. C

83. The parasympathetic root of the celiac plexus is a branch of which of the following?
- Greater splanchnic
 - Pelvic splanchnic
 - Lumbar splanchnic
 - Posterior vagal trunk
 - Lesser splanchnic

Explanation:

The parasympathetic root of the celiac plexus comes from the posterior vagal trunk, which is a continuation of the vagus nerve providing parasympathetic innervation to abdominal organs.

Key. D

84. The bifurcation of the abdominal aorta occurs at the level of which of the following structures?

- Crest of the Ilium
- Inguinal ligament
- Pubic tubercle
- Symphysis pubis
- Obturator foramen

Explanation:

The bifurcation of the abdominal aorta into the common iliac arteries occurs at the level of the L4 vertebra, which corresponds to the level of the crest of the ilium.

Key. A

85. The inferior vena cava begins anterior to which of the following structures?

- Right crus of the diaphragm
- Right kidney
- 5th lumbar vertebra
- Crest of the ilium
- Bifurcation of the aorta

Explanation:

The inferior vena cava begins at the level of the L5 vertebra, where it is formed by the union of the common iliac veins, making this the correct anatomical reference.

Key. C

86. The cisterna chyli is the inferior end of which of the following structures?

- Inferior vena cava
- Abdominal aorta
- Renal vein
- Testicular artery
- Thoracic duct

Explanation:

The cisterna chyli is the dilated inferior end of the thoracic duct, collecting lymph from the lower half of the body before it ascends through the diaphragm.

Key. E

87. How are the pelvic splanchnic nerves distinct from other splanchnic nerves?

- Derived from ventral primary rami of L2, L3, and L4
- Derived from the sympathetic trunks

- Convey preganglionic parasympathetic fibers to the inferior hypogastric plexus
- Provide postganglionic sympathetic innervation to the cecum
- Convey postganglionic parasympathetic innervation to the ascending colon

Explanation:

Pelvic splanchnic nerves are distinct because they carry preganglionic parasympathetic fibers, whereas other splanchnic nerves typically carry sympathetic fibers.

Key. C

88. All of the following statements concerning the psoas major muscle are correct EXCEPT:

- It passes inferolaterally, deep to the inguinal ligament.
- It inserts on the lesser trochanter of the femur.
- The pelvic splanchnic nerves are embedded in the posterior part of the psoas.
- It is a long, thick and fusiform muscle.
- Its name stems from a Greek word meaning "muscle of the loin."

Explanation:

The pelvic splanchnic nerves are not embedded in the psoas major muscle; they originate from the sacral spinal nerves, making this statement incorrect.

Key. C

89. Which of the following statements correctly applies to the suprarenal medulla?

- Derived from mesoderm
- Secretes corticosteroids and androgens
- Contains chromaffin cells
- Secretes acetylcholine
- Produces hormones that cause the kidney to retain sodium and water in response to stress

Explanation:

The suprarenal medulla contains chromaffin cells, which secrete catecholamines like adrenaline and noradrenaline, playing a crucial role in the body's stress response.

Key. C

90. The anatomical left and right lobes of the liver are separated on the diaphragmatic surface of the liver by which of the following structures?

- Fissure for the round ligament of the liver
- Fissure for the ligamentum venosum
- Falciform ligament
- Porta hepatis
- Lesser omentum

Explanation:

The falciform ligament separates the left and right anatomical lobes of the liver on its diaphragmatic surface.

Key. C

91. All of the following statements concerning the splenic artery are correct EXCEPT:
 A. It is the largest branch of the celiac trunk.
 B. It follows a tortuous course along the inferior border of the pancreas.
 C. It divides into five or more branches that enter the hilum of the spleen.
 D. It runs anterior to the left kidney.
 E. It follows posterior to the omental bursa.

Explanation:

The splenic artery follows a tortuous course along the superior border of the pancreas, not the inferior border, making this statement incorrect.

Key. B

92. In the developing embryo, the midgut rotates 270 degrees around which of the following structures?
 A. Superior mesenteric artery
 B. Celiac trunk
 C. Splenic artery
 D. Left renal artery
 E. Inferior vena cava

Explanation:

The midgut undergoes a 270-degree counterclockwise rotation around the axis of the superior mesenteric artery during embryonic development.

Key. A

93. Which of the following structures is avascular?
 A. Superior ileocecal fold
 B. Inferior ileocecal fold
 C. Mesoappendix
 D. Appendix
 E. Cecum

Explanation:

The inferior ileocecal fold, also known as the bloodless fold of Treves, is an avascular structure, meaning it lacks a blood supply.

Key. B

94. Which of the following statements correctly relates to the 3rd part of the duodenum?
 A. It is supported by the suspensory ligament of the duodenum.
 B. The bile and pancreatic ducts enter its posteromedial wall.
 C. It is crossed by the superior mesenteric artery and vein.
 D. It attaches to the hepatoduodenal ligament.
 E. It lies to the right and runs parallel to the inferior vena cava.

Explanation:

The 3rd part of the duodenum is crossed anteriorly by the superior mesenteric artery and vein, which is a key anatomical relationship.

Key. C

95. The left gastro-omental artery arises from which of the following arteries?
 A. Celiac trunk
 B. Right gastric
 C. Gastroduodenal
 D. Splenic
 E. Hepatic

Explanation:

The left gastro-omental artery (also known as the left gastroepiploic artery) arises from the splenic artery, supplying the greater curvature of the stomach.

Key. D

96. Rugae are located in which of the following structures?
 A. Duodenum
 B. Jejunum
 C. Ileum
 D. Cecum
 E. Stomach

Explanation:

Rugae are the folds found in the inner lining of the stomach, which allow it to expand as it fills with food.

Key. E

97. All of the following statements concerning the esophagus are correct EXCEPT:
 A. It extends from the pharynx to the stomach.
 B. It is crossed by the arch of the aorta.
 C. It is crossed by the right main bronchus.
 D. It passes through the esophageal hiatus.
 E. It normally has four constrictions.

Explanation:

The esophagus is crossed by the left main bronchus, not the right, making this statement incorrect.

Key. C

98. Digestion occurs mainly in which of the following structures?
 A. Cecum and ascending colon
 B. Transverse colon
 C. Stomach and duodenum
 D. Jejunum and ileum
 E. Transverse and sigmoid colon

Explanation:

The majority of digestion occurs in the stomach and duodenum, where enzymes break down food into absorbable nutrients.

Key. C

99. Most reabsorption of water occurs in which of the following structures?
 A. Stomach
 B. Jejunum
 C. Sigmoid colon
 D. Ascending colon
 E. Rectum

Explanation:

The majority of water reabsorption in the digestive tract occurs in the ascending colon, where the remaining liquid from digested food is absorbed.

Key. D